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Short notes and reviews

Brine shrimp and other worthy creatures

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Review of: **Introduction to the Class Branchiopoda,** by Henry J. Dumont and Stefan V. Negrea. Backhuys Publ., Leiden, 2002, 398 pp., ISBN 90-5782-112-5

A gratifying thing has been happening in the world of natural history publication. We have had for some years now a remarkable array of volumes and series appearing devoted to documenting the biota of the world. One can call easily to mind the *Fauna Iberica,* out of the Museo Nacional de Ciencias Naturales Consuelo Superior de Investigaciones Científicas, Madrid; or the *Checklist delle Specie della Fauna d'Italia* published by Edizioni Calderini, Bologna; or the impressive *Zoological Catalogue of Australia,* produced by CSIRO Publ., Collingwood, Victoria. There are others. However, one of the more practically oriented of these series is *Guides to the Identification of the Microinvertebrates of the Continental Waters of the World* being issued by Backhuys Publ. in Leiden. This volume, *Introduction to the Class Branchiopoda,* is the 19th in that series.

However, it is more than an identification guide. The first 240 pages of this almost 400-page book contain a general introduction and overview of the branchiopods as a whole. There are strong points and weak points to the volume. The initial section on "History of Research" is certainly comprehensive, but it too often consists of just long lists of references consisting of only authors and dates. Once in awhile we get something more meaty, such as some references to "... a weak side to Daday's work: ... " on page 15. I would have appreciated more of this sort of thing and more in depth analysis of branchiopod workers in their time periods as well.

However, the section on "External Morphology" that follows upon the history is rather good. Illustrating the points of anatomy in the text could have been helped with the use of more SEM's, but the illustrations on the whole are helpful. Branchiopoda is a very diverse group with over 1,000 species and counting, so what is offered by Dumont and Negrea provides some insight into the biodiversity of the group and the technical knowledge needed to identify these forms. The external anatomy is then followed with sections on "Internal Anatomy," which uses for the most part mostly line art illustrations, and "Reproduction."

I found the "Development and Growth" section interesting. A fair amount is known concerning branchiopod ontogeny, I suspect because as fresh water forms they are relatively easy to maintain in the laboratory for these purposes. Indeed, there is a "Research Methods" section with culture and lab techniques. Most of the references concerning development are to classically oriented studies, and I did miss seeing some of the more recent developmental genetic work that has been put to spectacular affect in elucidating developmental control of crustacean body plans.

The section on "Feeding and Locomotion" is relatively short and comes out of the Cannon/Fryer school of functional studies. The branchiopods are a group that would profit from re-study in these regards with some of the techniques employed in the study of these activities in maxillopodans, especially copepods, put to good use here.

I was keen to see what they did with the "Biogeography" section. Some of it showed promise, such as the world overview of anostracans. However, I suspect there are really not yet enough phylogenetic studies available to be able to do much in regard to a modern synthesis of biogeography. Indeed, "Molecular Phylogeography" received only a brief mention; the field holds promise but much remains to be done.

The section on the fossil record and evolution was interesting. It is surprising that we know as much as we do about branchiopod fossils given that fresh water fossils are not that common. The authors bring in some things that I am not sure belong here, such as *Branchiocaris* from the Burgess Shale, but we cannot fault their efforts to be complete. They do better when they take up the phylogenetic affinities amongst the living orders.

Of course it is when we get into the classification of the branchiopods that things get hairy. Every one who has ever approached the subject has had a different viewpoint. We get a survey of these in the section dealing with classification, but it would have been helpful to have a more informative explanation for where the ideas embodied in the classification of Negrea *et al.,* (1999) came from. Of course the reference is easy enough to consult, but it would have been nice to have more exegesis immediately at hand.

The latter part of the book deals with identifications. We are provided keys down to family level and diagnoses for all these taxa, which are matched with figures to help sort things out. However, one is left with the impression that if you want to go further than family level, one had better have an expert nearby with whom you can consult. The reference list looks to be fairly exhaustive and can easily serve to get interested persons into the old as well as current literature on Branchiopoda.

While this book has a few points that I wish were different, I cannot fault the overall attempt. I for one will be glad to have this volume at hand for easy reference to matters dealing with Branchiopoda. The price for some might seem a bit high at € 90, but that is not really so much these days. It certainly is a worthy addition to the series, and libraries with interests in serving aquatic biology should acquire it, as well as experts interested in any aspects of branchiopod studies.

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